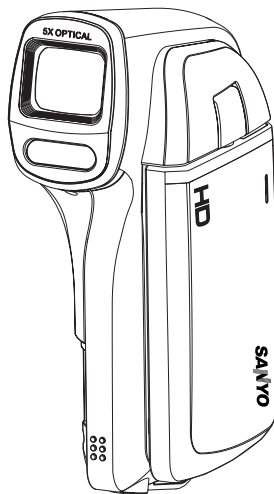


# SANYO

## INSTRUCTION MANUAL

## VPC-HD100

Digital Video Camera



Please read these instructions carefully before using the camera.  
Keep this manual in a safe place for later reference.

## **FCC STATEMENT**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

### **Note:**

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Use of shielded cable is required to comply with Class B limits in Subpart B of Part 15 of the FCC rules.

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

### **Notice**

If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the communication cable (USB, etc.) again.

# READ THIS FIRST

## Trademark Information

- Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.
- Pentium® is a registered trademark of Intel Corporation.
- Macintosh is a trademark of Apple Inc.
- SD™ is a trademark.
- SDHC™ is a trademark.



- Other names and products may be trademarks or registered trademarks of their respective owners.

## Product Information

- Product design and specifications are subject to change without notice. This includes primary product specifications, software, software drivers, and user's manual. This User Manual is a general reference guide for the product.
- The product and accessories that come with your camera may be different from those described in this manual. This is due to the fact that different retailers often specify slightly different product inclusions and accessories to suit their market requirements, customer demographics, and geographical preferences. Products very often vary between retailers especially with accessories such as batteries, chargers, AC adapters, memory cards, cables, pouches, and language support. Occasionally a retailer will specify a unique product color, appearance, and internal memory capacity. Contact your dealer for precise product definition and included accessories.
- The illustrations in this manual are for the purpose of explanation and may differ from the actual design of your camera.
- The manufacturer assumes no liability for any errors or discrepancies in this user manual.

# SAFETY INSTRUCTIONS

Read and understand all **Warnings** and **Cautions** before using this product.

## Warnings

**If foreign objects or water have entered the camera, turn the power off and remove the battery.**

Continued use might cause fire or electric shock. Consult the store of purchase.



**If the camera has fallen or its case has been damaged, turn the power off and remove the battery.**

Continued use might cause fire or electric shock. Consult the store of purchase.



**Do not disassemble, change or repair the camera.**

This might cause fire or electric shock. For repair or internal inspection, ask the store of purchase.



**Do not use the camera in areas near water.**

This might cause fire or electric shock. Take special care during rain, snow, on the beach, or near the shore.



**Do not place the camera on inclined or unstable surfaces.**

This might cause the camera to fall or tilt over, causing damage.



**Keep the battery out of the reach of children.**

Swallowing the battery might cause poisoning. If the battery is accidentally swallowed, immediately consult a physician.



**Do not use the camera while you are walking, driving or riding a motorcycle.**

This might cause you to fall over or result in traffic accident.



## Cautions

**Insert the battery paying careful attention to the polarity (+ or -) of the terminals.**

Inserting the battery with its polarities inverted might cause fire and injury, or damage to the surrounding areas due to the battery rupturing or leaking.



---

**Do not fire the flash close to anyone's eyes.**

This might cause damage to the person's eyesight.



---

**Do not subject the LCD monitor to impact.**

This might damage the glass on the screen or cause the internal fluid to leak. If the internal fluid enters your eyes or comes into contact with your body or clothes, rinse with fresh water. If the internal fluid has entered your eyes, consult a physician to receive treatment.



---

**A camera is a precision instrument. Do not drop it, strike it or use excessive force when handling the camera.**

This might cause damage to the camera.



---

**Do not use the camera in humid, steamy, smoky, or dusty places.**

This might cause fire or electric shock.



---

**Do not remove the battery immediately after long period of continuous use.**

The battery becomes hot during use. Touching a hot battery might cause burns.



---

**Do not wrap the camera or place it in cloth or blankets.**

This might cause heat to build up and deform the case, resulting in fire. Use the camera in a well-ventilated place.



---

**Do not leave the camera in places where the temperature may rise significantly, such as inside a car.**

This might adversely affect the case or the parts inside, resulting in fire.



---

**Before you move the camera, disconnect cords and cables.**

Failure to do this might damage cords and cables, resulting in fire and electric shock.



**Warning:**

TO PREVENT THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

**FOR AMERICAN USERS**

The following advisory is included in accordance with the laws of the State of California (USA):

**WARNING:**

This product contains chemicals, including lead, known to the States of California to cause cancer, birth defects or other reproductive harm. ***Wash hands after handling.***

- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designated to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - \* Reorient or relocate the receiving antenna.
  - \* Increase the separation between the equipment and receiver.
  - \* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - \* Consult the dealer or an experienced radio/TV technician for help.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## FOR CANADIAN USERS

- This Class B digital apparatus complies with Canadian ICES-003

## FOR EU USERS



This symbol mark and recycling systems described below apply to EU countries and do not apply to countries in other areas of the world.

Your SANYO product is designed and manufactured with high quality materials and components which can be recycled and/or reused.

The symbol mark means that electrical and electronic equipment, batteries and accumulators, at their end-of-life, should be disposed of separately from your household waste.

### Note:

If a chemical symbol is printed beneath the symbol mark, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration.

This will be indicated as follows: Hg: mercury, Cd: cadmium, Pb: lead

In the European Union there are separate collection systems for used electrical and electronic equipment, batteries and accumulators.

Please, dispose of them correctly at your local community waste collection/recycling centre.

Please, help us to conserve the environment we live in!

### Manufacturer and Address

SANYO Electric Co., Ltd.  
5-5, Keihan-hondori, 2-chome,  
Moriguchi City, Osaka, Japan

### Authorized Representative and Address

SANYO FISHER Sales (Europe) GmbH  
Stahlgruberring 4, D-81829 Munich, Germany

## Symbols used in this manual



- Points giving some extended instructions or special points to pay attention to.

You may find the answers to questions or problems concerning camera operation in the sections “Troubleshooting”.

### FCC information



Tested To Comply  
With FCC Standards

FOR HOME OR OFFICE USE

### Declaration of Conformity

Model number: VPC-HD100

Trade Name: SANYO

Responsible party: SANYO FISHER COMPANY

Address: 21605 Plummer Street  
Chatsworth, California 91311

Telephone No.: (818) 998-7322

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

### Canadian ICES-003 information

This class B digital apparatus complies with Canadian ICES-003.



## Notes on Battery Usage

When you use the battery, carefully read and strictly observe the **Safety Instructions** and the notes described below:

- Use only the specified battery.
- Avoid extremely cold environments as low temperatures can shorten the battery life and reduce camera performance.
- When you are using a new rechargeable battery or a rechargeable battery that has not been used for an extended period of time, it may affect the number of images that can be captured. Therefore, to maximize its performance and lifetime, we recommend that you fully charge the battery and discharge it for at least one complete cycle before use.
- The battery may feel warm after a long period of continuous use of the camera or the flash. This is normal and not a malfunction.
- The camera may feel warm after a long period of continuous use. This is normal and not a malfunction.
- If the battery is not to be used for a long period of time, remove it from the camera to prevent leakage or corrosion and store it after no battery power is left. Stored for a long time in a fully charged condition, its performance may be impaired.
- Always keep the battery terminals clean.
- There is a risk of explosion if the battery is replaced by an incorrect type.
- Dispose of used battery according to the recycle instructions.
- Charge the rechargeable battery fully before using for the first time.
- To prevent short-circuiting or fire, keep the battery away from other metal objects when carrying or storing.

## CAUTION

- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type.
  - SANYO Li-ion Battery, NP-61, 3.7V, 1100mAh
  - BYD Li-ion Battery, NP60, 3.7V, 1050mAh

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# INTRODUCTION

## Overview

Congratulations on your purchase of the new digital video camera. Equipped with a 5.0-megapixel sensor, this digital video camera captures still images and video clips with high definition.

## Package Contents

Carefully unpack your digital video camera and ensure that you have the following items:

### Common Product Components:

- Digital video camera
- Software CD-ROM
- USB cable
- AV cable
- YPbPr (HD out) cable
- Earphone
- Camera strap
- Camera pouch
- Rechargeable lithium-ion battery
- Battery charger
- Quick start guide
- Instruction manual

### Common (Optional) Accessories:

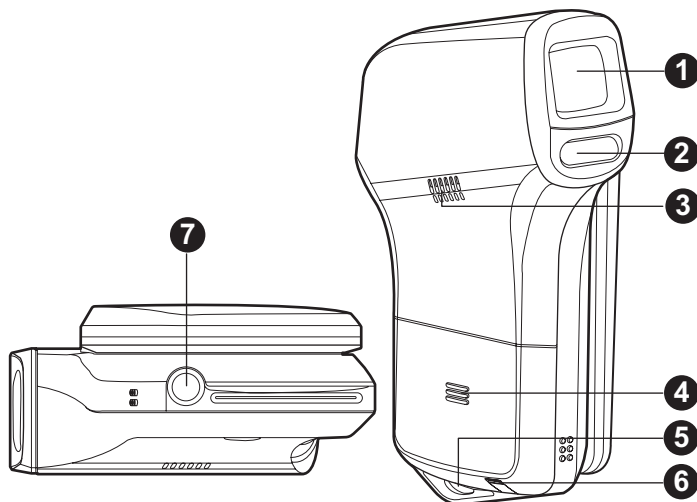
- SD/SDHC memory card



- 
- Accessories and components may vary by retailer.

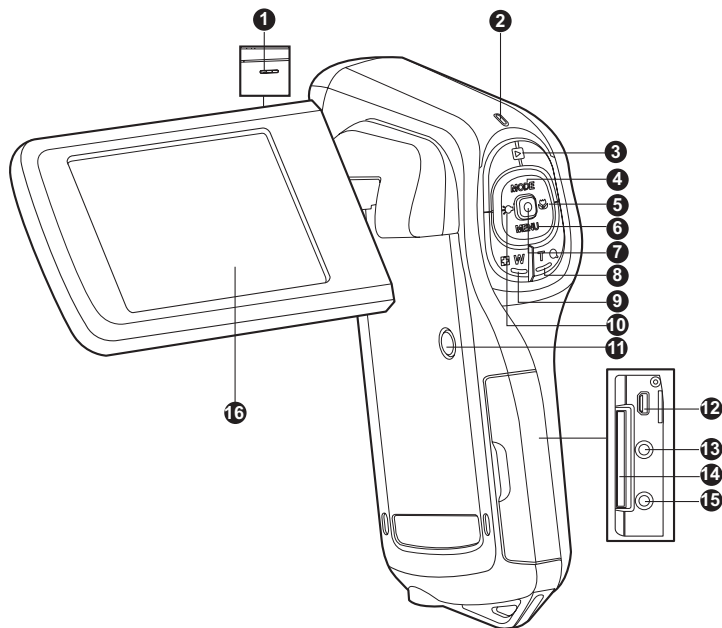
# GETTING TO KNOW YOUR DIGITAL VIDEO CAMERA

## Front View



1. Lens
2. LED assist light
3. Speaker
4. Battery cover
5. Strap holder
6. DC door
7. Tripod mount

## Rear View



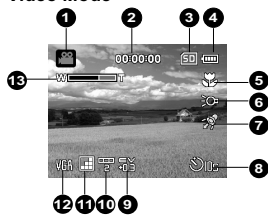
1. Microphone
2. Status LED
3. Play button
4. Up button  
**MODE** Mode button
5. Right button  
 Focus button
6. Down button  
**MENU** Menu button
7. OK / Record / Shutter button
8. Zoom in (telephoto) button

9. **W** Zoom out (wide-angle) button / Thumbnail button
10. Left button  
 Assist light button
11. Power button
12. USB or AV OUT terminal
13. HDTV terminal
14. SD/SDHC memory card slot
15. Earphone jack
16. LCD monitor

# LCD Monitor Display

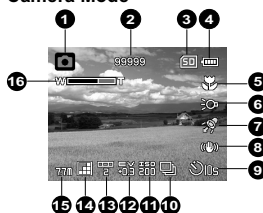
## Standby Mode

### Video Mode



1. Video mode icon
2. Available recording time
3. Storage media  
[SD] SD/SDHC memory card
4. Battery condition  
[Full] Full battery power  
[Medium] Medium battery power  
[Low] Low battery power  
[None] No battery power
5. Focus setting  
[Blank] Normal  
[Macro] Macro  
[∞] Infinity  
[Face] Face detection
6. Assist light ON
7. Scene mode  
[Blank] Auto  
[Portrait] Portrait  
[Night] Night  
[Sports] Sports  
[Landscape] Landscape  
[Sunset] Sunset  
[Beach/Snow] Beach/Snow  
[Spotlight] Spotlight  
[User Setting] User Setting
8. Self-timer  
[10s] 10 sec.  
[2s] 2 sec.
9. Exposure compensation
10. White balance  
[Blank] Auto  
[Daylight] Daylight  
[Cloudy] Cloudy  
[Fluoresc.1] Fluoresc.1  
[Fluoresc.2] Fluoresc.2  
[Tungsten] Tungsten  
[Manual WB] Manual WB
11. Image quality  
[Fine] Fine  
[Standard] Standard  
[Economy] Economy
12. Video size  
[1440] 1440 x 1080  
[1280] 1280 x 720  
[VGA] 640 x 480
13. Zoom status bar

### Camera Mode



1. Camera mode icon
2. Available number of shots
3. Storage media
4. Battery condition
5. Focus setting  
[Blank] Normal  
[Macro] Macro  
[∞] Infinity  
[Face] Face detection
6. Assist light ON
7. Scene mode
8. Image stabilization icon
9. Self-timer
10. Capture mode icon  
[Blank] Single  
[AEB] AEB  
[Continuous] Continuous
11. ISO  
[Blank] Auto  
[64] 64  
[100] 100  
[200] 200  
[400] 400
12. Exposure compensation
13. White balance
14. Image quality
15. Image size  
[77m] 3200 x 2400 (FW interpolation)  
[5m] 2560 x 1920  
[3m] 2048 x 1536  
[1m] 1280 x 960  
[VGA] 640 x 480
16. Zoom status bar

## Audio Recording Mode (Standby)



1. Audio mode icon
2. Available recording time
3. Storage media
4. Battery condition
5. Elapsed time
6. Recording indicator
7. Status indicator (standby)

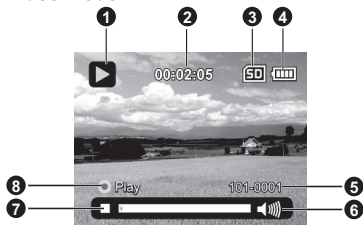
## (Recording)



1. Recording indicator
2. Status indicator (recording)

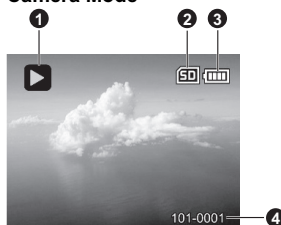
## Playback Mode

### Video Mode



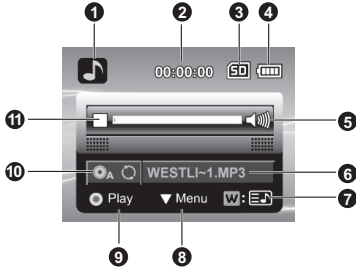
1. Video playback mode icon
2. Elapsed time
3. Storage media
4. Battery condition
5. Folder and file number
6. Volume indicator
7. Video status bar
8. Playback indicator

### Camera Mode



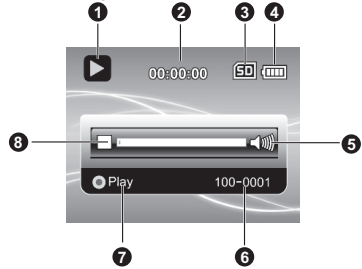
1. Image playback mode icon
2. Storage media
3. Battery condition
4. Folder and file number

### MP3 Mode



1. MP3 mode icon
2. Elapsed time
3. Storage media
4. Battery condition
5. Volume indicator
6. MP3 title
7. MP3 list
8. MP3 menu
9. Playback indicator
10. Play mode indicator
11. MP3 status bar

### Audio Playback Mode



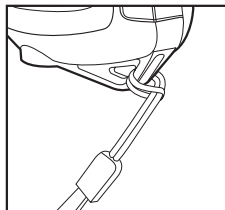
1. Audio playback mode icon
2. Elapsed time
3. Storage media
4. Battery condition
5. Volume indicator
6. File name (ex. 100-0001)
7. Playback indicator
8. Audio status bar



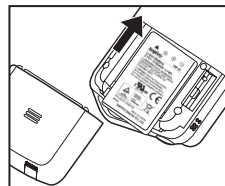
# GETTING STARTED

## Preparation

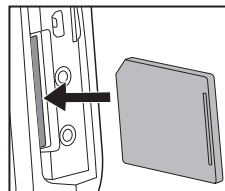
1. Attach the camera strap.
2. Open the battery cover.



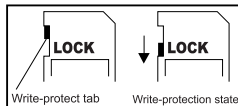
3. Insert the supplied battery with correct orientation as shown.
  - Close the battery cover and make sure it is locked securely.



4. Insert an SD/SDHC memory card.
  - The digital video camera does not have built-in memory and cannot operate without an SD/SDHC memory card inserted. Make sure to insert an SD/SDHC memory card before use.
  - Open the SD card slot cover gently.
  - Insert an SD/SDHC memory card (optional) to the card slot.
  - Close the cover and make sure it is locked securely.
  - Be sure to format the SD/SDHC memory card with this video camera before its initial usage.



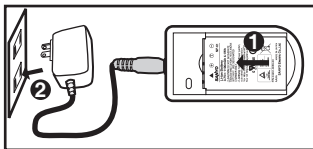
- To prevent valuable data from being accidentally deleted from an SD/SDHC memory card, you can slide the write protect tab (on the side of the SD/SDHC memory card) to "LOCK".
- To save, edit, or delete data on an SD/SDHC memory card, you must unlock the card.
- To prevent damaging of SD/SDHC memory card, be sure to turn off the power when inserting or removing the SD/SDHC memory card. If inserting or removing the SD/SDHC memory card with the power on, the digital video camera will automatically turn off.
- Be careful not to drop the batteries when opening or closing the battery cover.



## Charging the Battery

Charge the battery fully with the supplied battery charger before use.



1. Insert the battery into the battery charger.
2. Connect the power cord to the charger and insert the plug into a wall outlet.
  - The status LED on the charger lights red when charging has started and lights green when charging is completed. The LED also lights green if no battery is inserted into the charger.
  - Charging time varies according to the ambient temperature and the status of battery.
  - Remove the battery after charging is completed.

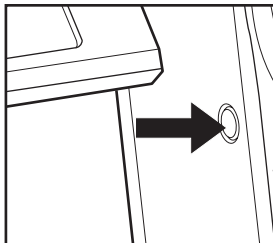


- 
- The battery may feel warm after it has been charged or immediately after being used. This is normal and not a malfunction.
  - When using the camera in cold areas, keep the camera and battery warm by holding them inside your outer clothes.

## Turning the Power On/Off

Load the battery and insert an SD/SDHC memory card before starting.

- Press the  button until the digital video camera turns on.
- To turn the power off, press the  button again.



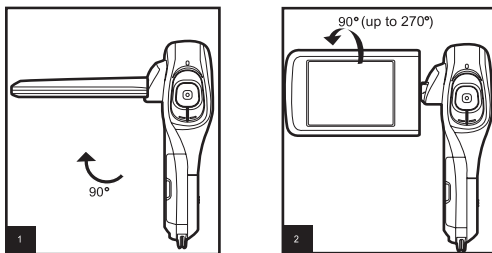
- The power is turned off automatically when the digital video camera has not been operated for a defined period of time. To resume operation, turn the power on again. Refer to section in this manual titled "Auto Off" in the setup menu for further details.

## LED Indicators

Indicators	State	Description/Activity
Status LED	Solid green	The digital video camera is powering up.
Status LED	Solid green	The digital video camera is ready to record images (or videos).
Status LED	Blinking green	USB communication/transfer is in progress.
Status LED	Blinking green	Reading/Writing files.

## Handling the Digital Video Camera

1. Open the panel by pulling it away from the digital video camera.
2. Choose the angle of the monitor that suits you best by rotating the panel.
  - The panel rotates up to 270°. It is useful for self-portrait.



- Make sure you open the LCD panel at 90 degrees before attempting to rotate it.
- Rotate the LCD panel carefully with the correct direction. Over rotation or rotating to the wrong direction may damage the hinge that connects the LCD monitor to the digital video camera.
- Avoid touching the LCD monitor when moving the LCD panel.

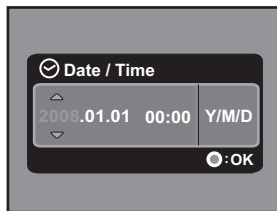
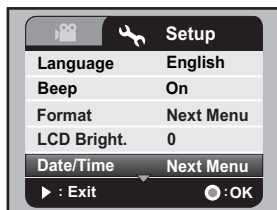
### Cautions:

- Do not hold the digital video camera by only holding the LCD panel.
- Be careful not to block the lens, microphone, or LED lights with your fingers when shooting.
- Close the LCD panel when not using the digital video camera to avoid damages.

## Setting the Date and Time

The date/time needs to be set if/when:

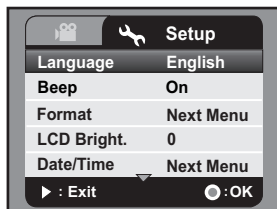
- The digital video camera is turned on for the first time.
  - The digital video camera is turned on after being left without battery for an extended period of time.
1. Press the (L) button until the digital video camera turns on.
  2. Press the **MENU** button.
  3. Select [Setup] with the ► (☘) button.
  4. Select [Date/Time] with the ▲ (MODE) / ▼ (MENU) buttons, and press the (E) button.
    - Select the item's field with the ◀ (←) / ▶ (→) / (☘) buttons and adjust the value for the date and time with the ▲ (MODE) / ▼ (MENU) buttons.
    - The time is displayed in 24-hour format.
    - After confirming all settings are correct, press the (E) button.
  5. To exit from the [Setup] menu, press the ► (☘) button.



## Choosing the Language

Specify in which language menus and messages are to be displayed on the LCD monitor.

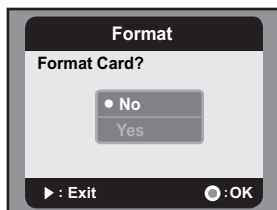
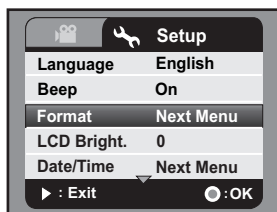
1. Press the **MENU** button.
2. Select [Setup] menu with the ► (☘) button.
3. Select [Language] with the ▲ (MODE) / ▼ (MENU) buttons, and press the (E) button.
4. Select the displayed language with the ▲ (MODE) / ▼ (MENU) buttons, and press the (E) button.
  - The setting will be stored.



## Formatting the Memory Card

This utility formats the SD/SDHC memory card and deletes all stored images, video clips, and data.




1. Press the **MENU** button.
2. Select [Setup] menu with the ► (👉) button.
3. Select [Format] with the ▲ (MODE) / ▼ (MENU) buttons, and press the ◻ button.
4. Select [Yes] with the ▲ (MODE) / ▼ (MENU) buttons, and press the ◻ button.
  - To cancel formatting, select [No] and press the ◻ button.
5. To exit from the [Setup] menu, press the ► (👉) button.



# CAPTURE MODE

Your digital video camera is equipped with a 2.5" full color LTPS LCD monitor to help you capture/playback images and video clips or adjust menu settings.



## Recording Video Clips

1. Press the  button until the digital video camera turns on.
  - The default mode is Video Mode.
2. Compose the image on the LCD monitor.
3. Press the  button to start recording.
4. To stop recording, press the  button.
  - The recording time depends on the storage media size and the subject to be recorded.



- If the access speed of your SD/SDHC memory card is not fast enough for recording video clips in the currently selected size, the recording will stop. In this case, select a video quality lower than the current one.
- When using SDHC memory card to record high resolution video clips, higher than Class 4 is recommended to prevent recording from discontinuing.

## Capturing Still Images




1. Press the  button until the digital video camera turns on.
2. Press the **MODE** button to switch to capture mode.
3. Compose the image on the LCD monitor.
4. Press the  button to capture the image.

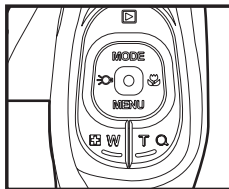


## Using the Zoom Function

Using a combination of 5x optical zoom and 4x digital zoom permits zoom photography at up to 20x magnification. While the digital zoom can be a useful feature, the more an image is enlarged (zoomed), the more pixelated (grainier) the image will appear.

To capture a zoomed image/video clip, perform the following steps:


1. Compose the image on the LCD monitor.
  - Press the **T**  button to zoom in on the subject, and enlarge the subject on the LCD monitor.
  - Press the  **W** button to view a wider angle of the image.
  - The status of digital magnification is displayed on the zoom status bar.
  - At 1440 x 1080 (video mode): the preview can reach digital zoom to 2x. At 1280 x 720 and 640 x 480 (video mode): the preview can reach digital zoom to 4x.
2. Press the  button to capture/record the image/video clip.

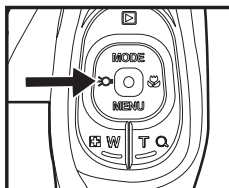


- To activate digital zoom function, set [Digi. Zoom] to [On] in the capture or video menu.

## Using the Assist Light

When capturing still images/video clips in dark places, you can turn on the LED assist light in front of the digital video camera to help brightening and focusing on the subject.

1. In video/capture mode, press the  button to turn the LED assist light on or off.

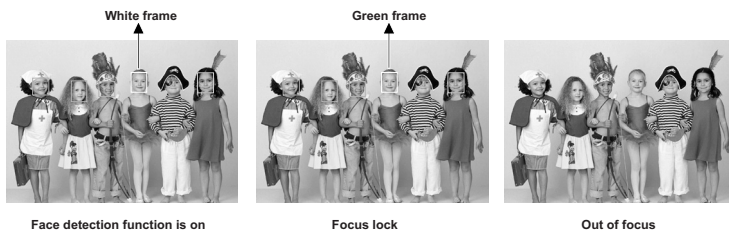






- The assist light can only be activated in capture or video mode. When the digital video camera is switched to playback, audio or MP3 mode, the assist light will turn off automatically.



## Recording Shots using Face Detection Technology

Face Detection Technology can identify and focus on the human faces in the image. This advanced function simultaneously detects up to 9 human faces regardless of their position in the scene.








1. In capture mode, toggle  button until  icon appears on the LCD monitor.
  - The white frame is identified as the “top priority” face (main focus frame), and gray ones around the other faces.
2. Press the  button halfway down to lock the focus.
  - The main focus frame simultaneously turns green.
  - If the “top priority” face is out of focus, all frames will be disappeared from the screen.
3. Press the  button down fully to capture your image.

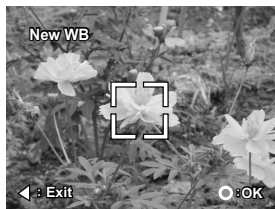
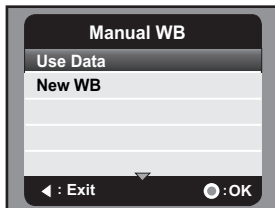


- Subjects that are not suitable with this function:
  - a. A person is wearing glasses, sunglasses, or face is covered with hat or hair.
  - b. A person turns sideways.

## Setting Manual White Balance

You can manually set and store the white balance when the menu options do not offer a good match.



1. In video/capture mode, press the **MENU** button.
2. Select [W.Balance] with the ▲ (MODE) / ▼ (MENU) buttons, and press the  button.
3. Select [Manual WB] with the ▲ (MODE) / ▼ (MENU) buttons, and press the  button.
4. Select [New WB], and press the  button.
  - To use the previously set white balance data, select [Use Data], and press the  button.
5. Point the video camera at a white paper or white slate, and press the  button.
  - When the manual white balance is stored, [COMPLETE] will be displayed and the video camera returns to recording mode.

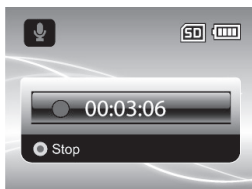


# AUDIO MODE











## Recording Audio Files

The digital video camera enables you to record and playback audio files anytime and anywhere.

1. Press the **MODE** button to switch to audio mode.
2. Press the  button to start audio recording.
  - To stop recording, press the  button.



## Playing Back Audio Files












1. Press the  button.
2. Select the desired audio clip with the  (  ) /  buttons.
3. Press the  button to begin playback.
  - To pause, press the  button again.
  - To stop playback, press the  (**MENU**) button.
  - To adjust the volume, use the  **W** / **T**  buttons.

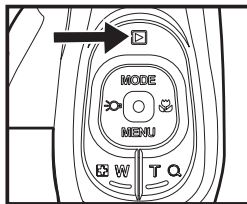


# PLAYBACK MODE

You can play back all the recorded files on the LCD monitor.













## Playing Back Video Clips

1. Press the  button.
  - The last recorded file appears on the LCD monitor.
2. Select the desired video clip with the  () /  () buttons.
3. Press the  button to start video playback.
  - To pause video playback, press the  button.
  - To cancel pause, press the  button again.
  - To adjust the volume, use the  **W** / **T**  **Q** buttons.
4. To stop video playback, press the  (**MENU**) button and return to the start of the video clip.



- Video clips cannot be displayed rotated or enlarged.
- To play the video clip back on your computer, you may use Windows Media Player 9 above version. Windows Vista user may use Windows Movie Maker.

## Playing Back Still Images

1. Press the  button.
  - The last recorded file appears on the LCD monitor.
2. Select the desired image with the  () /  () buttons.
3. Press the  button to adjust the zoom ratio.
  - The magnification factor is displayed on the LCD monitor.
4. To view different portion of the images, press the  (**MODE**) /  (**MENU**) /  () /  () buttons to adjust the display area.



- The magnification factors range from 1.5x to 8.0x.

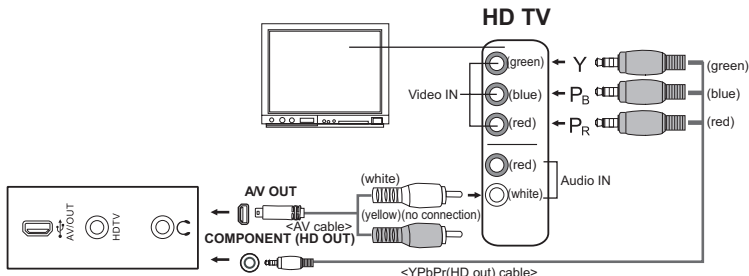
## Playing Back Still Images/Video Clips on TV

You can also playback your images on a TV screen. Before connecting to any devices, make sure to select NTSC / PAL system to match the video input system of the TV/video equipment you are going to connect to the digital video camera, then turn all connected devices off.

1. Connect one end of the AV cable to the AV OUT terminal of the digital video camera.
2. Connect the other end to the AV input socket of the TV set.
3. Turn the TV and digital video camera on.
4. Playback the still images/video clips.
5. The method of operation is the same as playing back still images and video clips on the digital video camera.

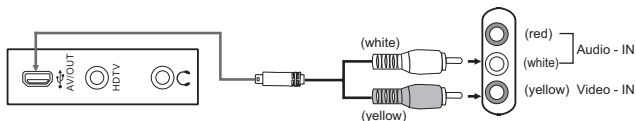
## Connecting the Digital Video Camera to HDTV

HD TV (High Definition Television) is a digital television broadcasting system with better resolution than traditional television systems. It can perform HD (720P) high resolution quality.





1. Connect one end of the YPbPr (HD out) cable into the (Video IN) port on the HDTV and the other end into the HDTV terminal of the digital video camera.
2. Connect one end of the AV cable into the (Audio IN) socket of the HDTV and the other end into the AV OUT terminal of the digital video camera. (Do not connect the yellow connector to HDTV's AV-IN.)
3. Turn the TV and digital video camera on.
  - The video camera will auto detect and set the settings when the cables are connected.

## Connecting for Standard TV



## Thumbnail Display




This function allows you to view thumbnail images on the LCD monitor so you may search for a particular image/video clip/audio file.

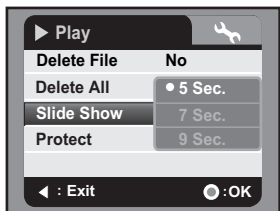
1. In playback mode, press the  **W** button.
  - 3 thumbnail images are displayed simultaneously.
2. Use the **▲ (MODE)** / **▼ (MENU)** buttons to select the file to be displayed.
  - Use the **◀ (◁)** / **▶ (▷)** buttons to go to previous or next page.
3. Press the  button to display the selected image on full screen.



## Slide Show Display

The slideshow function enables you to play back your still images automatically in sequential order as a slideshow. This is a very useful and entertaining feature for reviewing captured images and for presentations.

1. In the playback mode, press the **MENU** button.
2. Select [Slide Show] with the **▲ (MODE)** / **▼ (MENU)** buttons and press the  button.
3. Select the desired interval time with the **▲ (MODE)** / **▼ (MENU)** buttons, and press the  button.
  - The slide show starts.
  - To stop the slideshow during playback, press the  button.














- Video clips are displayed as images and will not be played back.
- Audio files are not displayed in slide show.

## Protecting Images/Video Clips/Audio Files





Set the data to read-only to prevent files from being deleted by mistake.

### Protecting One File


1. Press the  button.
2. Select the file you wish to protect with the  () /  () buttons.
3. Press the **MENU** button.
4. Select [Protect] with the  (**MODE**) /  (**MENU**) buttons and press the  button.
5. Select [Single] with the  (**MODE**) /  (**MENU**) buttons, and press the  button.
  - The selected file is protected.
  - To cancel protection, perform step 1 to 5 again.












### Protecting All Files

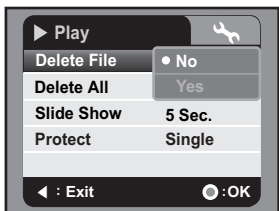
1. Select [All] from the Protect menu and press the  button.
2. Select [Lock] with the  (**MODE**) /  (**MENU**) buttons, and press the  button.
  - All stored files are protected.
  - To cancel all protection, perform the above steps and select [Unlock] in step 2.
  - To cancel protection for one specific file, perform above step 1 to 5 of "Protecting One File".



- The protect icon  is displayed with protected files.
- Formatting an SD/SDHC memory card overrides protection, and deletes all files regardless of their protected status.

## Deleting Images/Video Clips/Audio Files





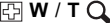
1. Press the  button.
2. Select the file you wish to delete with the  () /  () buttons.
3. Press the **MENU** button.
4. Select [Delete File] or [Delete All] with the  (**MODE**) /  (**MENU**) buttons and press the  button.
  - [Delete File]: Deletes the current file.
  - [Delete All]: Deletes all files.
5. Select [Yes] to delete. Select [No] to cancel.
6. Press the  button to confirm.

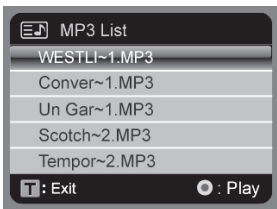




# MP3 MODE

The digital video camera enables you to playback MP3 files. You may download MP3 files to your computer and then copy them into an SD/SDHC memory card (into an "MP3" folder). Insert an SD/SDHC memory card with MP3 files recorded into the digital video camera.

1. Press the **MODE** button to switch to MP3 mode.
2. Press the  **W** button to enter the MP3 List and select the MP3 file you wish to playback. Press the  button to confirm.
3. Press the  button to begin playback.
  - To pause, press the  button again.
  - To adjust the volume, use the  **W / T** buttons.
4. To stop playback, press the **▼ (MENU)** button.

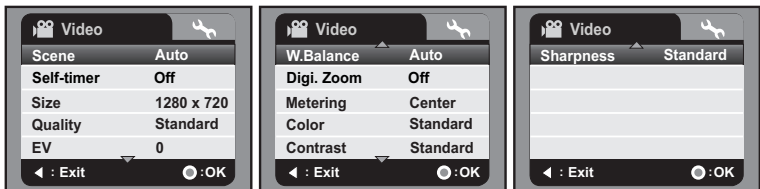


- To delete MP3 files, connect the digital video camera to your computer. Select and delete the files via the computer. For further information, please refer to the section in this manual titled "Downloading / Deleting Your Files via Computer" (page 42).

# MENU OPTIONS

## Video Menu

This menu is for the basic settings to be used when shooting video clips.



1. The default mode is Video Mode.
2. Press the **MENU** button.
3. Select the desired option item with the **▲ (MODE)** / **▼ (MENU)** buttons, and press the **⏏** button to enter its respective menu.
4. Select the desired setting with the **▲ (MODE)** / **▼ (MENU)** buttons, and press the **⏏** button.
5. To exit from the menu, press the **◀ (EXIT)** button.

### Scene

Select from 9 different scene modes in accordance with the shooting conditions.

- \* [Blank] Auto
- \* [👤] Portrait
- \* [🌃] Night
- \* [🏀] Sports
- \* [🏞️] Landscape
- \* [🌅] Sunset
- \* [🏖️] Beach/Snow
- \* [🔦] Spotlight
- \* [🔧] User Setting

### Self-timer

This activates the self-timer and sets the delay time.

- \* [Blank] Off
- \* [🕒] 2 Sec.
- \* [🕒] 10 Sec.

### Size

This sets the size of the video clips that will be captured.

- \* [📺] 1440 x 1080
- \* [📺] 1280 x 720
- \* [VGA] 640 x 480

### Quality

This sets the quality (compression) at which the video clips is captured.

- \* [📺] Fine
- \* [📺] Standard
- \* [📺] Economy

## **EV**

Your digital video camera adjusts the exposure of each shot automatically. However, if the subject is very dark, or very bright, you may override the digital video camera's automatic exposure determination to make the subject brighter or darker. This is called EV compensation. The EV compensation can be adjusted from -1.8EV to +1.8EV.

## **W.Balance**

This sets the white balance for a variety of lighting conditions and permits images to be captured that approach the conditions that are seen by the human eye.

- \* [Blank] Auto
- \* [☀️] Daylight
- \* [☁️] Cloudy
- \* [💡] Fluoresc.1
- \* [💡] Fluoresc.2
- \* [🔥] Tungsten
- \* [🔧] Manual WB

## **Digi. Zoom**

This sets whether or not to use digital zoom at the time of photography.

- \* On / Off

## **Metering**

This sets the metering method for calculating the exposure.

- \* Center: Averages the light metered from the entire frame, but gives greater weight to the subject matter in the center.
- \* Spot: A very small portion of the center of the screen is measured, and the exposure is calculated.

## **Color**

This sets the color of the video clips that will be captured.

- \* Standard / Vivid / B&W / Sepia

## **Contrast**

This sets the degree of difference between light and dark in video clips that will be captured.

- \* Standard / Hard / Soft

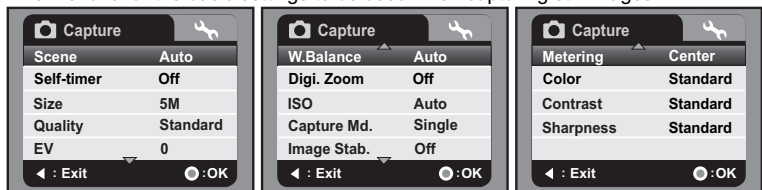
## **Sharpness**

This sets the sharpness of the video clips that will be captured.

- \* Standard / Hard / Soft

## Capture Menu

This menu is for the basic settings to be used when capturing still images.



1. Press the **MODE** button to switch to capture mode.
2. Press the **MENU** button.
3. Select the desired option item with the **▲ (MODE)** / **▼ (MENU)** buttons, and press the **⏏** button to enter its respective menu.
4. Select the desired setting with the **▲ (MODE)** / **▼ (MENU)** buttons, and press the **⏏** button.
5. To exit from the menu, press the **◀ (EXIT)** button.

### Scene

Refer to the section in this manual titled "Scene" in Video Menu (page 33) for further details.

### Self-timer

Refer to the section in this manual titled "Self-timer" in Video Menu (page 33) for further details.

### Size

This sets the size of the images that will be captured.

\* **[7.7m]** 3200 x 2400 (FW interpolation)

\* **[5m]** 2560 x 1920

\* **[3m]** 2048 x 1536

\* **[1m]** 1280 x 960

\* **[VGA]** 640 x 480

### Quality

Refer to the section in this manual titled "Quality" in Video Menu (page 33) for further details.

### EV

Refer to the section in this manual titled "EV" in Video Menu (page 34) for further details.

### W.Balance

Refer to the section in this manual titled "W.Balance" in Video Menu (page 34) for further details.

## Digi. Zoom

Refer to the section in this manual titled “Digi. Zoom” in Video Menu (page 34) for further details.

## ISO

This sets the sensitivity for capturing images. When the sensitivity is raised (and the ISO figure is increased), photography will become possible even in dark locations, but the more pixelated (grainier) the image will appear.

\* [Blank] Auto

\*  64

\*  100


\*  200

\*  400

## Capture Md.

This sets the shooting mode for capturing still images.

\* [Blank] Single: Captures a single image.

\*  AEB: Auto exposure bracketing capture mode.

\*  Continuous: Captures 3 images continuously.

## Image Stab.

This sets whether or not to use image stabilization at the time of photography. This function minimizes the influences of hand shaking when you want to capture an image.

\* Off / On

## Metering

Refer to the section in this manual titled “Metering” in Video Menu (page 34) for further details.

## Color

Refer to the section in this manual titled “Color” in Video Menu (page 34) for further details.

## Contrast

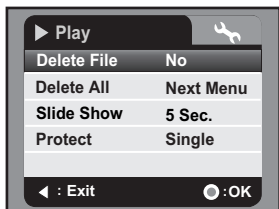
Refer to the section in this manual titled “Contrast” in Video Menu (page 34) for further details.

## Sharpness

Refer to the section in this manual titled “Sharpness” in Video Menu (page 34) for further details.

## Playback Menu

In this menu, choose which settings are to be used for still image/video clip playback.



1. Press the button.
2. Press the **MENU** button.
3. Select the desired option item with the ▲ (**MODE**) / ▼ (**MENU**) buttons, and press the button to enter its respective menu.
4. Select the desired setting with the ▲ (**MODE**) / ▼ (**MENU**) buttons, and press the button.
5. To exit from the menu, press the ◀ () button.

### Delete File

Refer to section in this manual titled “Deleting Images/Video Clips/Audio Files” (page 31) for further details.

### Delete All

Refer to section in this manual titled “Deleting Images/Video Clips/Audio Files” (page 31) for further details.

### Slide Show

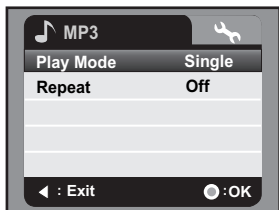
Refer to section in this manual titled “Slideshow Display” (page 29) for further details.

### Protect

Refer to section in this manual titled “Protecting Images/Video Clips/Audio Files” (page 30) for further details.

## MP3 Menu

This menu is for the basic settings to be used when playing back MP3 files.



1. Press the **MODE** button to switch to MP3 mode.
2. Press the **MENU** button.
3. Select the desired option item with the ▲ (**MODE**) / ▼ (**MENU**) buttons, and press the button to enter its respective menu.
4. Select the desired setting with the ▲ (**MODE**) / ▼ (**MENU**) buttons, and press the button.
5. To exit from the menu, press the ◀ (EXIT) button.

### Play Mode

Set the playback mode of the MP3 files.

\* [Single]: Play a single MP3 file.

\* [All]: Play all MP3 files.

### Repeat

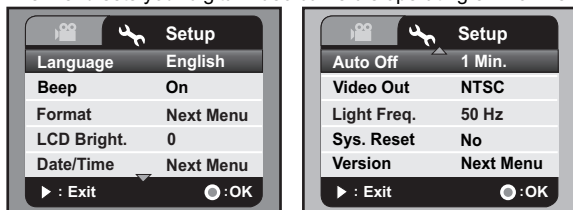
Set the repeat mode of the MP3 files.

\* [Off]: Play the listed files only once.

\* [On]: Play the listed MP3 files repeatedly.

## Setup Menu

This menu sets your digital video camera's operating environment.



1. Press the **MENU** button.
2. Select the [Setup] menu with the ▶ (👉) button.
3. Select the desired option item with the ▲ (MODE) / ▼ (MENU) buttons, and press the ◻ button to enter its respective menu.
4. Select the desired setting with the ▲ (MODE) / ▼ (MENU) buttons, and press the ◻ button.
5. To exit from the menu, press the ▶ (👉) button.

### Language

Refer to section in this manual titled “Choosing the Language” (page 20) for further details.

### Beep

This sets whether or not to mute the digital video camera sound each time you press the digital video camera's buttons.

\* On / Off

### Format

Refer to section in this manual titled “Formatting the Memory Card” (page 21) for further details.

### LCD Bright.

This sets the brightness of the LCD monitor screen.

\* The adjustment range is from -5 to +5.

### Date/Time

Refer to section in this manual titled “Setting the Date and Time” (page 20) for further details.

### Auto Off

If no operation is performed for a specific period of time, the power to the digital video camera is automatically turned off. This feature is useful to reduce battery usage.

\* Off / 1 Min. / 3 Min. / 5 Min. / 10 Min.



**Video Out**

Set TV/video compatibility with the equipment you are going to connect to the digital video camera.

\* NTSC / PAL

**Light Freq.**

The function allows to change the light frequency of environment to 60 Hz or 50 Hz.

\* 50 Hz / 60 Hz

**Sys. Reset**

Return all basic settings to the digital video camera's default settings.

\* No / Yes

**Version**

This display the firmware version of the digital video camera.

# INSTALLING SOFTWARE PROGRAM

1. Please make sure you have Windows Media Player 9 or QuickTime 7.0 installed onto your computer first.
2. Please install the decoder program (available in the CD).
  - H.264 files may be played back with Windows Media Player 9. (Decoder is designed for H.264 decode)

MP4/H.264 playback system requirements:

- At least 512MB of RAM
- 64MB or higher video card
- Windows 2000 Service Pack 4 or XP or Vista 32 or Vista 64
- DirectX 9.0b or higher
- Audio format 48KHz HE-AAC or AAC


<b>Resolution</b>	<b>fps</b>	<b>CPU requirements</b>
640 x 480	30 fps	2.4 GHz Intel Pentium 4 or higher
1280 x 720	30 fps	3.2 GHz Intel Pentium D(dual-core) or higher
1440 x 1080	30 fps	Core 2 Duo 2.0 & 128MB independent memory for image display

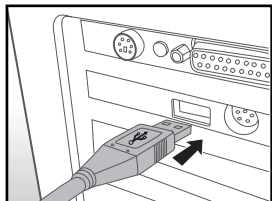
# TRANSFERRING FILES TO YOUR COMPUTER

## System Requirement

Windows	Macintosh
<ul style="list-style-type: none"><li>■ Pentium III 800 MHz or equivalent</li><li>■ Windows 2000/XP/Vista</li><li>■ 256MB RAM (512MB recommended)</li><li>■ 150MB available hard disk space</li><li>■ CD-ROM drive</li><li>■ Available USB port</li></ul>	<ul style="list-style-type: none"><li>■ PowerPC G3/G4/G5</li><li>■ OS 9.0 or later</li><li>■ 256MB RAM (512MB recommended)</li><li>■ 128MB hard disk space</li><li>■ CD-ROM drive</li><li>■ Available USB port</li></ul>

## Downloading / Deleting Your Files via Computer

1. Press the  button until the digital video camera turns on.
2. Connect one end of the USB cable (supplied) to the USB terminal of the digital video camera.
3. Connect the other end of the USB cable to an available USB port on your computer.
4. From the Windows desktop, double click on “My Computer”.
5. Look for a new “removable disk” icon.
  - This “removable disk” is actually the memory (or memory card) in your video camera.  
Typically, the video camera will be assigned drive letter “E” or higher.
6. Double click on the removable disk and locate the DCIM, MP3 and AUDIO folders.
7. Double click on the respective folder to open it to find more folders.
  - Your recorded images, video clips, audio files will be inside these folders.
8. Copy and paste or drag and drop files to a folder on your computer.
  - Copy MP3 files from your computer into the MP3 folder of your SD/SDHC memory card.
9. To delete files, simply select the unwanted files and delete.



**Mac users:** Double-click the “untitled” or “unlabeled” disk drive icon on your desktop. iPhoto may automatically launch.

### Notes on Image Printing

After transferring data to a computer, it stores and displays the digital images that have been saved in the SD/SDHC memory card from the digital video camera and enables those images to be printed on a variety of digital printers.

# SPECIFICATIONS

Item	Description
Image sensor	1/2.5" CMOS sensor
Effective pixels	5.0 megapixels
Image resolution	<Still image> 7.7M: 3200 x 2400 (FW interpolation), 5M: 2560 x 1920, 3M: 2048 x 1536, 1M: 1280 x 960, VGA: 640 x 480 <Video clip> 1440 x 1080 (30 fps), 1280 x 720 (30 fps), 640 x 480 (30 fps)
Recording media	Supports SD/SDHC memory card (up to 8GB) (optional)
File format	Image format: JPEG; Video format: H.264; Audio format: AAC
Lens	Aperture: F3.3 ~ F3.7 Focal Length: 6.4 ~ 32 mm
Focus range	Macro Wide: 10cm ~ infinity Tele: 1m ~ infinity Standard Wide: 50cm ~ infinity Tele: 1m ~ infinity
Shutter speed	1 ~ 1/4000 sec.
LCD monitor	2.5" full color LTPS LCD (153K pixels)
Self-timer	10 sec delay, 2 sec delay
Exposure compensation	-1.8EV~ +1.8EV (in 0.3EV increments)
White balance	Auto, Daylight, Cloudy, Fluoresc.1, Fluoresc.2, Tungsten, Manual WB
ISO	Auto, 64, 100, 200, 400 (Standard Output Sensitivity) * Sensitivity is measured in compliance with the ISO Standard (ISO 12232:2006)
Interface	USB terminal, AV/OUT terminal, HDTV terminal, earphone jack
Power	Rechargeable Lithium-ion battery (3.7V)
Dimensions	Approx. 87.4 x 114.6 x 40.5 mm (without protruding parts)
Weight	Approx. 164g (without battery and memory card)

\* Design and specifications are subject to change without notice.

# APPENDIX

## Possible Number of Shots

The table shows the approximate shots/recording time that you can capture/record at each setting based on the capacity of the SD/SDHC memory card.

### Possible recording time / sec (video clip)

Size	Quality	SD/SDHC memory card capacity						
		128MB	256MB	512MB	1GB	2GB	4GB SDHC	8GB SDHC
1440 x 1080	Fine	00:01:57	00:04:04	00:08:17	00:16:46	00:33:12	01:05:46	02:11:38
	Standard	00:02:14	00:04:39	00:09:28	00:19:08	00:37:52	01:15:00	02:30:06
	Economy	00:02:37	00:05:26	00:11:01	00:22:17	00:44:04	01:27:14	02:54:34
1280 x 720	Fine	00:02:37	00:05:26	00:11:01	00:22:17	00:44:04	01:27:14	02:54:34
	Standard	00:03:09	00:06:30	00:13:11	00:26:38	00:52:40	01:44:15	03:28:37
	Economy	00:03:57	00:08:06	00:16:24	00:33:06	01:05:26	02:09:29	04:19:04
VGA 640 x 480	Fine	00:05:14	00:10:44	00:21:40	00:43:42	01:26:21	02:50:50	05:41:47
	Standard	00:06:15	00:12:47	00:25:48	00:52:01	01:42:44	03:23:15	06:46:37
	Economy	00:07:43	00:15:47	00:31:51	01:04:12	02:06:50	04:10:56	08:22:02

### Possible number of shots (still image)

Size	Quality	SD/SDHC memory card capacity						
		128MB	256MB	512MB	1GB	2GB	4GB SDHC	8GB SDHC
77m 3200 x 2400 (FW interpolation)	Fine	32	67	138	278	545	1091	2194
	Standard	42	89	184	369	725	1450	2917
	Economy	53	111	229	460	903	1805	3632
5m 2560 x 1920	Fine	46	95	195	391	767	1532	3081
	Standard	61	126	259	519	1019	2036	4094
	Economy	76	157	323	647	1269	2535	5098
3m 2048 x 1536	Fine	69	142	291	582	1141	2279	4583
	Standard	92	189	388	774	1517	3030	6092
	Economy	115	236	483	965	1880	3774	7588
1m 1280 x 960	Fine	144	294	599	1195	2340	4670	9387
	Standard	191	391	797	1588	3110	6207	12477
	Economy	238	486	991	1976	3869	7722	15523
VGA 640 x 480	Fine	390	797	1625	3239	6341	12654	25437
	Standard	520	1061	2162	4309	8436	16836	33844
	Economy	648	1322	2693	5370	10512	20978	42169

## Troubleshooting

Refer to the symptoms and solutions listed below before sending the digital video camera for repairs. If the problem persists, contact your local reseller or service center.

Symptom	Cause	Solutions / Corrective Actions
The power does not come on.	The battery is not inserted.	Insert the battery correctly.
	The battery is exhausted.	Recharge the battery.
The battery or video camera feels warm.	Long period of continuous use of the video camera.	
Even if press the shutter button, the digital video does not shoot.	The SD/SDHC memory card does not have any free capacity.	Insert a new SD/SDHC memory card, or delete unwanted files.
	The video camera is not in shooting mode.	Set the video camera to shooting mode.
	The SD/SDHC memory card is write-protected.	Remove the write-protection.
The video camera cannot focus.	The lens is dirty.	Wipe clean with a soft, dry cloth or lens paper.
	The distance to the subject is smaller than the effective range.	Place your subject within the effective focus range.
Files cannot be deleted.	The file is protected.	Cancel protection.
	The SD/SDHC memory card is write-protected.	Remove the write-protection.
Cannot download images.	The free space on the hard disk in your computer may be insufficient.	Check whether the hard disk has a space for running Windows, and if the drive for loading image files has a capacity at least that of the memory card inserted in the video camera.



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